

## Abstract

A device for measuring the pressure of a gas mixture composed of gas components has an amperometric sensor (10) that works  
5 on the limiting current principle, having two electrodes (12, 13) connected to a direct voltage that are situated on a solid electrolyte (11), of which one electrode (13) is covered by a diffusion barrier (14), and a measuring element (17) for measuring the limiting current flowing via electrodes (12, 13)  
10 as a measure for the gas pressure. For the purpose of error-free measurement of the gas pressure in a gas mixture in which the concentration of the gas components fluctuates with time, means are provided which fix the mole fraction of a gas component, drawn upon for pressure measurement, that is  
15 present upstream of the diffusion barrier (14) at a constant 100%, at least during the pressure measuring phase. In one preferred exemplary embodiment, these means include a storage volume (18) that is adjacent to the diffusion barrier (14) which is separated from the gas mixture by a diffusion path  
20 (19), and two electrodes (20, 21), situated on the solid electrolyte (11), for pumping of the gas component into the storage volume (18).

(Figure 1)